

Abstract Submitted
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Renormalized Interactions with EDF Single-Particle Basis States¹ ANGELO SIGNORACCI, ALEX BROWN, Michigan State University, MORTEN HJORTH-JENSEN, University of Oslo — We calculate renormalized interactions starting from nucleon-nucleon interactions such as N3LO for the sd and pf model spaces. The new aspect of our method is to use single-particle energy spectra and single-particle radial wavefunctions derived from energy-density functionals, in place of the conventional harmonic-oscillator basis. We find that two-body matrix elements derived for these model spaces are sensitive to the basis and can change depending on the core nucleus. In particular, the two-body matrix elements are reduced if they involve weakly bound orbitals. This is important for nuclei near the neutron drip line.

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